

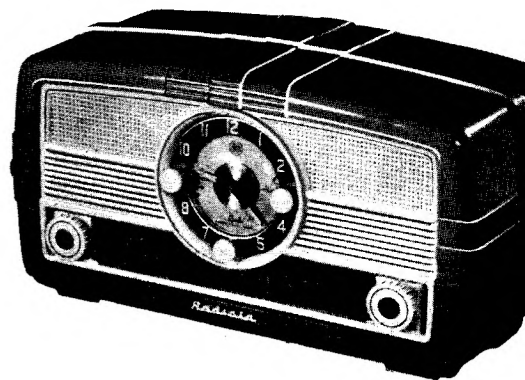
TECHNICAL INFORMATION AND SERVICE DATA

A.W.A. CLOCK-CONTROLLED-RADIO 563-MA, 563-MAY and 563-MAZ.

FIVE VALVE, BROADCAST, A.C. OPERATED
SUPERHETERODYNE

ISSUED BY:

AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



ELECTRICAL SPECIFICATIONS

Frequency Range	540-1600 Kc/s. (555-187.5 Metres)
Intermediate Frequency	455 Kc/s.
Power Supply Rating	200-260 volts 50 C.P.S. only
Power Consumption	Clock 2.5 watts Clock and Radio 42.5 watts
Loudspeaker	
	4 inch permanent magnet Part No. 26846 Transformer 31772D V.C. Impedance 3 ohms at 400 C.P.S.
Undistorted Power Output	3 watts

Valve Complement:

- (1) 6BE6 Converter
- (2) 6BA6 I.F. Amplifier
- (3) 6AV6 Detector, A.F. Amplifier, A.V.C.
- (4) 6AQ5 Output
- (5) 6X4 Rectifier.

Chassis Removal:

(1) Remove the Clock Alarm Knob by unscrewing it clockwise and the remainder of the Clock and Radio knobs by pulling them straight off their spindles. Also remove the "Hand-set" knob and spindle by pulling it from the back of the cabinet.

(2) Remove two recessed nuts from the top of the cabinet back, two screws from underneath the cabinet back and withdraw it.

(3) The chassis is held to the cabinet front by two screws situated under it. Removal of these enables the chassis to be withdrawn from the cabinet.

Clock Removal:

(1) Remove the complete chassis from the cabinet.

(2) Remove two screws holding the plastic shield to the metal spacers and withdraw the shield.

(3) Unscrew the two metal spacers holding the top of the clock to the front panel.

(4) Remove the clock plug from the socket on the receiver chassis.

The clock may now be lifted from the chassis.

When replacing the clock make sure that the bottom of the clock face engages in the clips on the receiver front panel. Then replace the metal spacers.

IMPORTANT:

As repairs to the clock will require the use of special equipment it is recommended that a spare be kept in stock and the faulty unit returned to the A.W.A. Service Department, 152 Parramatta Road, Stanmore, for repair.

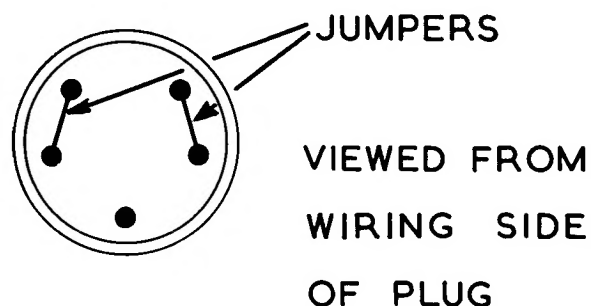
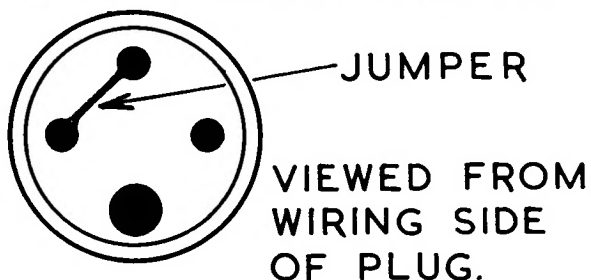
Operation of Receiver Without Clock:

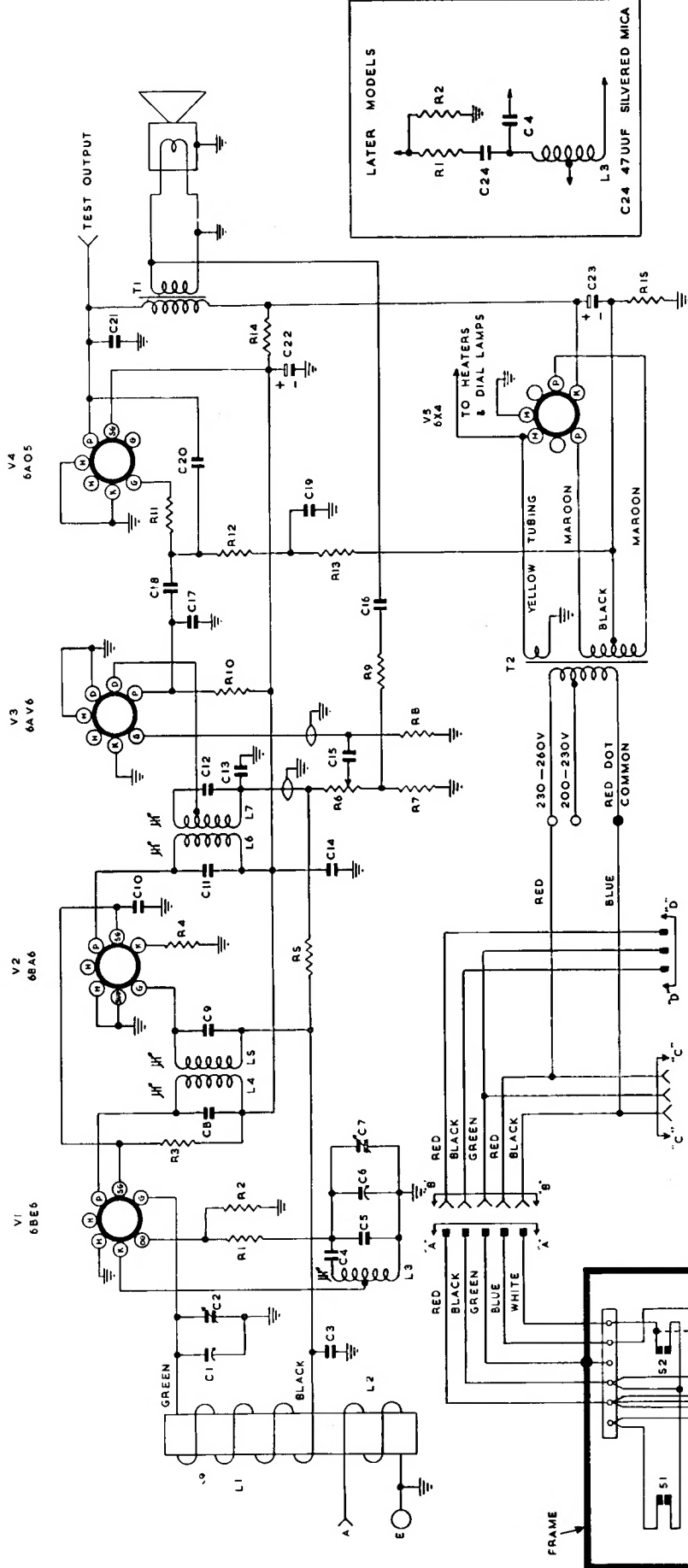
If it is desired to operate the receiver for either the serviceman's or client's use whilst a faulty clock is being repaired, the following plugs may be obtained from the A.W.A. Service Department:

Model 563-MA, 563-MAY Plug No. 29696.

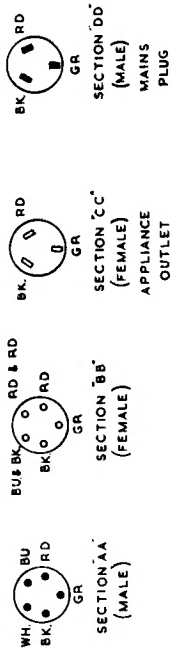
Model 563-MAZ Plug Code No. 581050.

Wire the plugs with jumpers as shown in the accompanying diagrams and insert in the socket on the receiver chassis.



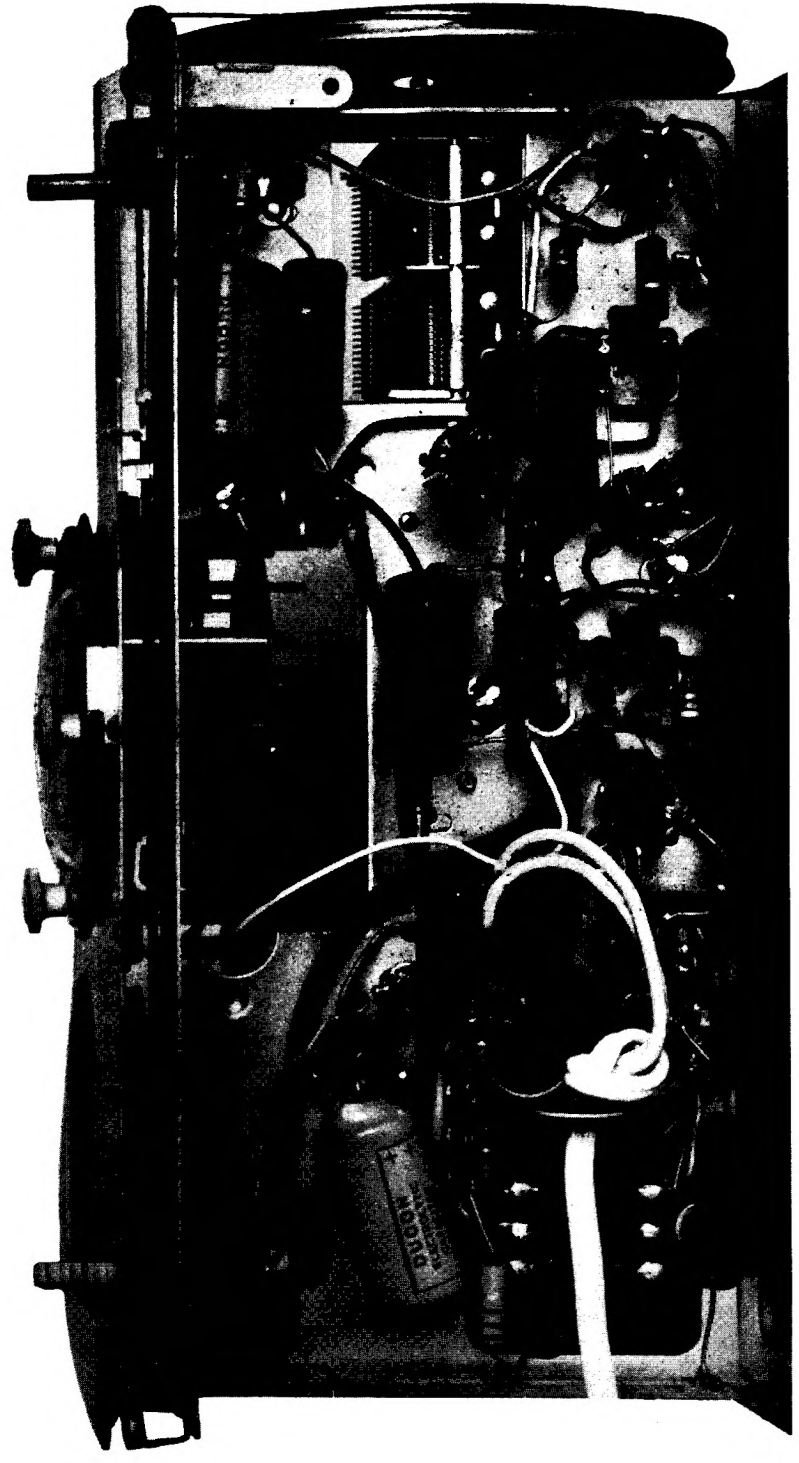


563-MAY: THE APPLIANCE OUTLET HAS BEEN REMOVED ON THIS MODEL. FOR CLOCK CONNECTIONS SEE 563-MA CIRCUIT



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H J K



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIG. 4

Connection to Power Supply:

The receiver should not be connected to any circuit supplying other than alternating current from 200-260 volts and at a frequency of 50 c.p.s. only.

The power supply connections are shown in the accompanying diagram.

RED DOT INDICATES COMMON CONNECTION FOR ALL VOLTAGES.

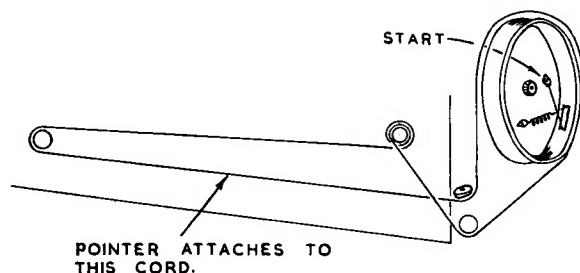
230-260
VOLTS

200-230
VOLTS



Drive Cord Replacement:

The accompanying diagram shows the route of the cord and the method of attachment.



ALIGNMENT PROCEDURE

Manufacturer's Setting of Adjustments:

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Realignment should be necessary only when components in tuned circuits are repaired or replaced or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be readjusted unless by skilled operators using special equipment.

For all alignment operations, connect the "low" side of the signal generator to the receiver chassis and keep the generator output as low as possible to avoid A.V.C. action. Also keep the volume control in the maximum clockwise position.

Testing Instruments:

- (1) A.W.A. Junior Signal Generator, type 2R7003, or
- (2) A.W.A. Modulated Oscillator, type J6726.

If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals.

- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE, MODELS 563-MAY, 563-MAZ

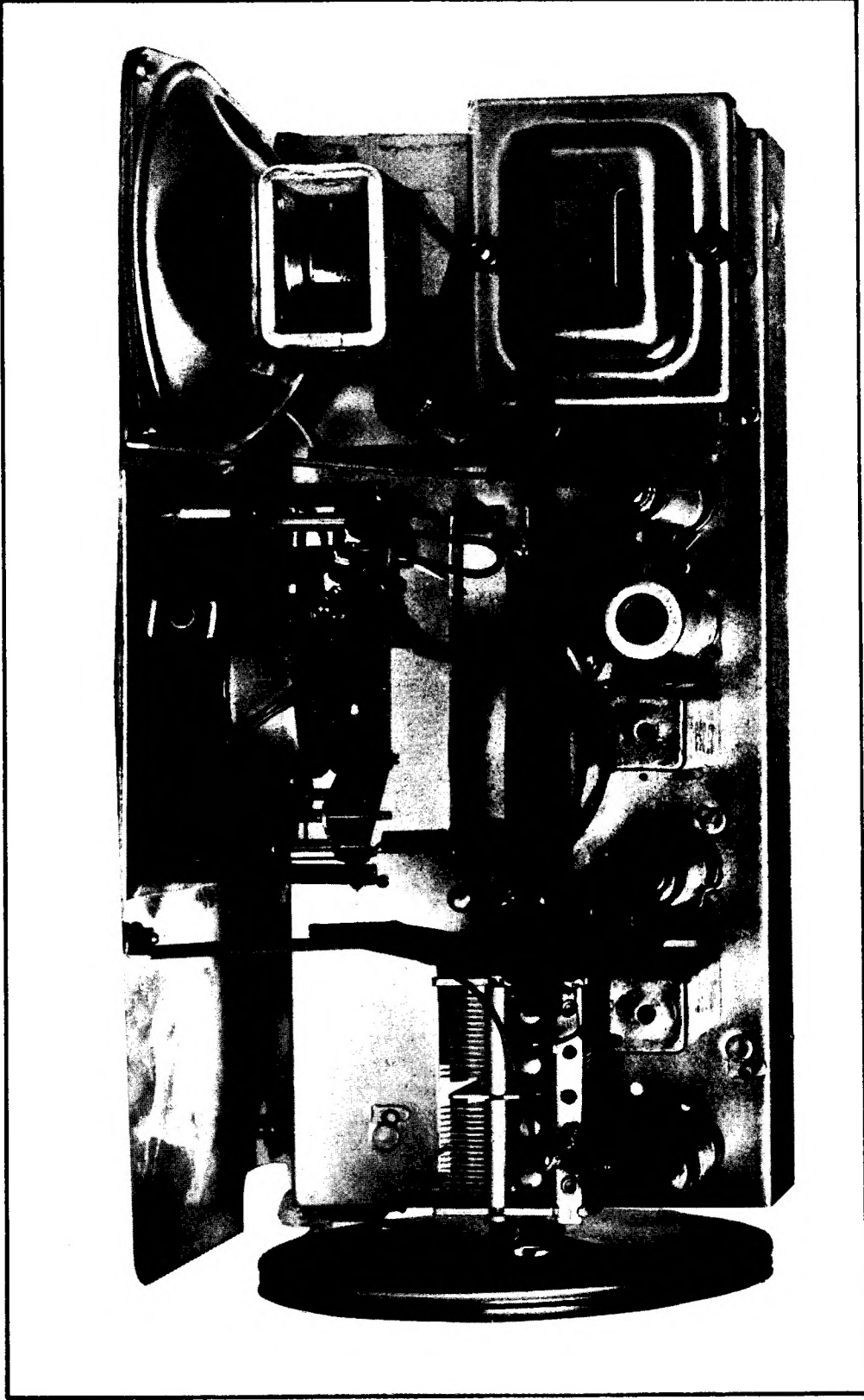
Alignment Order:	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for Maximum Peak Output:
1	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L7 Core
2	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L6 Core
3	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L5 Core
4	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L4 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Inductively coupled to Rod Aerial*	600 Kc/s.	600 Kc/s.	L.F. Osc. Core Adj. (L3)†
6	Inductively coupled to Rod Aerial*	1500 Kc/s.	1500 Kc/s.	H.F. Osc. Adj. (C7)
7	Inductively coupled to Rod Aerial*	1500 Kc/s.	1500 Kc/s.	H.F. Aer. Adj. (C2)
Repeat adjustments 5, 6 and 7.				

* A coil comprising 3 turns of 16 gauge D.C.C. wire and about 12 inches in diameter should be connected between the output terminals of the test instrument, placed concentric with the rod aerial and distant not less than 1 foot from it.

† Rock the turning control back and forth through the signal.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

A B C D E F G H J K



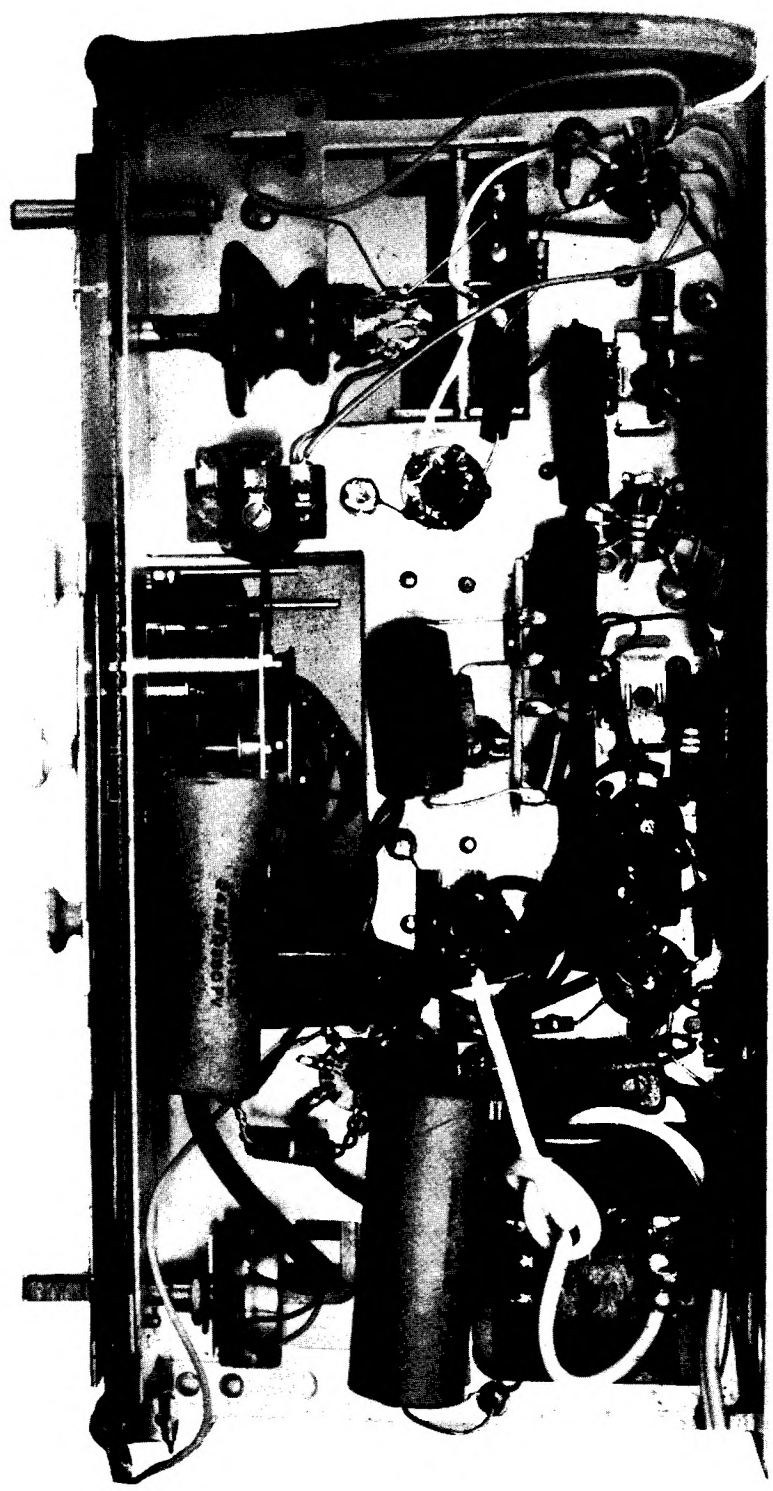
A B C D E F G H J K

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

FIG. 3

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H J K



A B C D E F G H J K

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIG.2

ALIGNMENT TABLE, MODEL 563-MA

Alignment Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for Maximum Peak Output
1	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L8 Core
2	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L7 Core
3	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L6 Core
4	Aerial Section of Gang (Drive End)	455 Kc/s.	540 Kc/s.	L5 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Lead	600 Kc/s.	600 Kc/s.	L.F. Osc. Core Adj. (L4)*
6	Aerial Lead	1500 Kc/s.	1500 Kc/s.	H.F. Osc. Adj. (C11)
7	Aerial Lead	1500 Kc/s.	1500 Kc/s.	H.F. Aer. Adj. (C5)
Repeat adjustments 5, 6 and 7.				

* Rock the tuning control back and forth through the signal.

SOCKET VOLTAGES

VALVES	Cathode to Chassis Volts:	Screen Grid to Chassis Volts:	Anode to Chassis Volts:	Anode Current mA:	Heater Volts:
6BE6 Converter	—	85	165	1.8	6.3
6BA6 I.F. Amp.	1.6	85	165	5.5	6.3
6AV6 Det., A.F. Amp., A.V.C.	—	—	80	0.3	6.3
6AQ5 Output	—	165	250	28	6.3
6X4 Rectifier	255	—	245/245 A.C. R.M.S.	—	6.3

Volts across back-bias resistor = 8 volts.

Total H.T. Current = 48 mA.

Measured at 240 volts A.C. supply. No signal input. Volume Control maximum clockwise. Voltmeter 20,000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

D.C. RESISTANCE OF WINDINGS, MODELS 563-MAY, 563-MAZ

Winding	D.C. Resistance in ohms
Feenie Aerial Assembly:	
Primary (L1)	†
Secondary (L2)	1
Oscillator Coil (L3)	5
I.F. Transformer Windings	15
Power Transformer (T2):	
Primary	50
Secondary	300
Loudspeaker Input Transformer (T1):	
Primary	525 or 430
Secondary	†

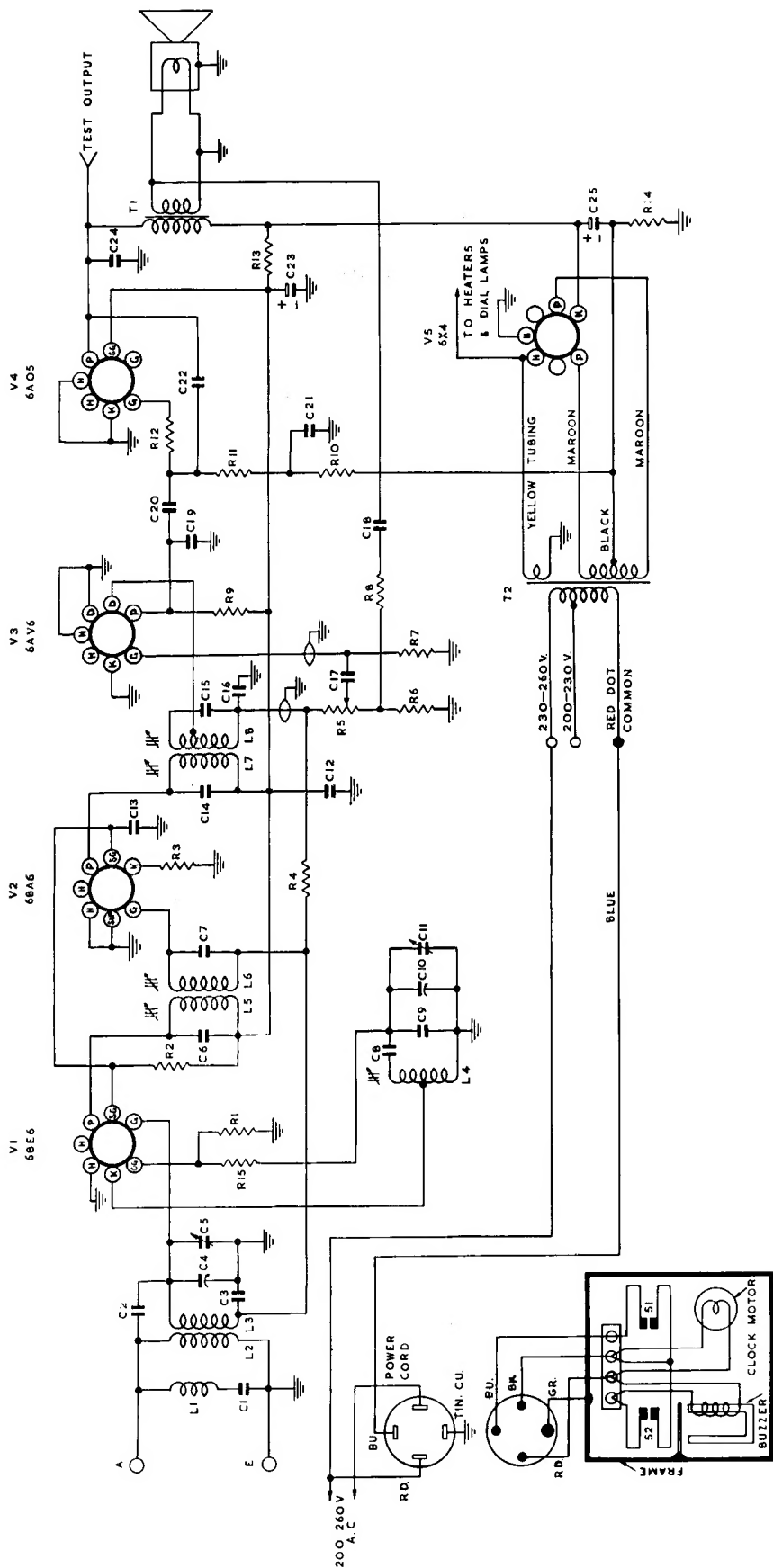
MODEL 563-MA

Winding	D.C. Resistance in ohms
Aerial Coil:	
Primary (L2)	3
Secondary (L3)	2
Oscillator Coil (L4)	5
I.F. Filter (L1)	17.5*
I.F. Transformer Windings	15
Power Transformer (T2):	
Primary	50
Secondary	300
Loudspeaker Input Transformer (T1):	
Primary	525 or 430
Secondary	†

* In some receivers this reading may be as high as 60 ohms.

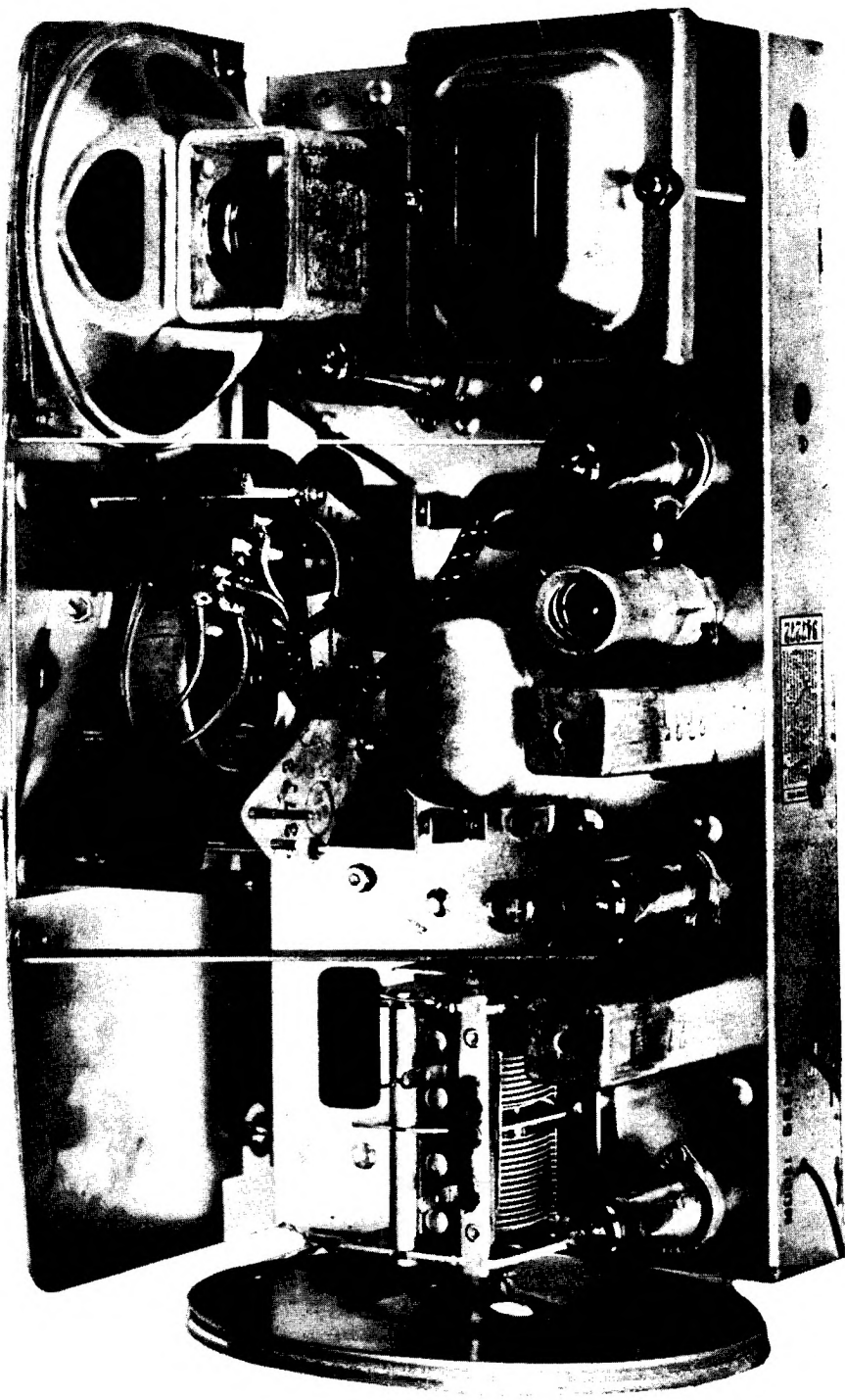
† Less than 1 ohm.

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations and it should not be assumed that a component is faulty if a slightly different reading is obtained.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H J K L



A B C D E F G H J K L

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIG. 1

MECHANICAL REPLACEMENT PARTS

ITEM	PART No.	ITEM	PART No.
Bracket (2) (Chassis Mounting)	31360	Knob (Radio)	31984
Bracket (Dial Lamp)	31974	Lamp Holder	4194
Bracket (Retaining Cabinet)	31982	Light Mask	31998
Bracket (2) (Rod Aerial Support) (563-MAY, 563-MAZ)	33196	Mounting Screw (Oscillator Coil)	31373
Cabinet Back	32466	Nameplate	27748
Cabinet Body and Fret	32464	Nut (Retaining Cabinet Back)	26523
Clamp, Spring (Retaining Clock Dust Cover)	33019	Nut (Retaining Volume Control)	5926
Clip (Retaining I.F.)	27780	Plate (Large, Underneath Cabinet)	31985
Clip (Retaining Spindle)	2524	Plate (Small, Underneath Cabinet)	31986
Clip (Retaining 4 pin socket)	21915	Pointer Assembly	31976
Clock Assembly (563-MA, 563-MAY)	31736	Pulley Bracket Assembly	31975
Clock Assembly (563-MAZ)	20894	Pulley, Drive Cord	31365
Cover (Power Transformer)	20150	Pulley Post (Pulley No. 31365)	31366
Dial Scale—Northern	32231	Socket, 4 pin (Clock) (563-MA, 563-MAY)	28313
Southern	32232	Socket, 5 pin (Clock) (563-MAZ)	Code No. 793062
Drive Bearing	27529	Socket, valve 7 pin	Code No. 794576
Drive Cord	9576/21	Socket, valve 9 pin	Code No. 793037
Drive Drum Assembly	31381	Spacer (Dust Cover Mounting)	33141
Drive Spindle	31981	Terminal Panel Assembly, 2 way	32822
Drive Spring	1741	Terminal Panel Assembly, 3 way	32824
Dust Cover (Clock)	33018	Terminal Panel Assembly, 4 way	32823
Fret Cloth	Code No. 212043	Terminal Panel Assembly, 5 way	32836
Gasket (Front Panel to Cabinet)	31972	Test Outlet	27685
Grommet (Power Cable)	Code No. 389005	Volume Control Cable	34363
Knobs, Clock:		Washer (Oscillator Coil Mounting)	7910
Alarm	33134		
Slumber	33135		
Hands Set	33136		
Radio, Alarm, OFF-ON	33137		

When ordering, always quote the above part numbers or code numbers, and in the case of coloured parts, such as cabinets, knobs, etc., the colour plus the part number.

CIRCUIT CODE—RADIOLA 563-MA

Code No.	Description	Part No.	Fig. No.	Location
INDUCTORS				
L1	I.F. Filter (including C1)	9382	2	D12
L2, L3	Aerial Coil 540-1600 Kc/s	30768	2	D14
L4	Oscillator Coil 540-1600 Kc/s	32406	2	F12
L5, L6	1st I.F. Transformer	27351	2	H14
L7, L8	2nd I.F. Transformer	27353	2	H10
RESISTORS				
R1	22,000 ohms		2	H16
R2	10,000 ohms		2	J15
R3	220 ohms		2	H12
R4	1.5 megohms		2	H10
R5	0.5 megohm Volume Control	26442	2	D3
R6	50 ohms		2	F10
R7	10 megohms		2	J7
R8	1,000 ohms		2	G11
R9	0.27 megohms		2	J9
R10	0.47 megohm		2	G4
R11	0.47 megohm		2	G5
R12	47,000 ohms		2	G6
R13	5,000 ohms		2	D5
R14	150 ohms		2	F3
R15	100 ohms		2	G15
CAPACITORS				
C1	47 μ F Silvered Mica		2	D12
C2	6.8 μ F Ceramic		2	F14
C3	0.05 μ F Paper 200V working		2	H13
C4	12-445 μ F Tuning	18624	1	F4
C5	2-20 μ F Trimmer (on gang)		1	F4
TRANSFORMERS				
T1	Loudspeaker Transformer	31772D	1	G9
	Power Transformer 50 C.P.S.	25807	1	G15
LOUDSPEAKERS				
	4" permanent magnet	26846	1	C15
SWITCHES				
S1	Radio Contacts			
S2	Buzzer — Alarm Contacts			
Code No.				
Description				
C6	100 μ F Silvered Mica (I.F. Assy)			
C7	100 μ F Silvered Mica (I.F. Assy)			
C8	440 μ F Padder $\pm 2\frac{1}{2}\%$			
C9	9 μ F Mica			
C10	12-445 μ F Tuning	18624	1	F5
C11	2-20 μ F Trimmer (on gang)		1	F5
C12	0.05 μ F Paper 400V working		2	E6
C13	0.05 μ F Paper 400V working		2	J13
C14	100 μ F Silvered Mica (I.F. Assy)		2	H10
C15	100 μ F Silvered Mica (I.F. Assy)		2	H11
C16	220 μ F Ceramic		2	J9
C17	0.01 μ F Paper 600V working		2	F10
C18	0.25 μ F Paper 200V working		2	J8
C19	100 μ F Mica		2	H8
C20	0.025 μ F Paper 400V working		2	F3
C21	0.1 μ F paper 200V working		2	H5
C22	12 μ F Mica		2	C7
C23	24 μ F 350 P.V. Electrolytic		2	J4
C24	0.0025 μ F Paper 600V working		2	F4
C25	24 μ F 350 P.V. Electrolytic		2	

CIRCUIT CODE, RADIOLA 563-MAY, AND 563-MAZ

Code No.	Description	Part No. Fig. No.	Location	Code No.	Description	Part No. Fig. No.	Location
INDUCTORS							
L1, L2	Ferrite Aerial Assembly	34327	G11	C6	12-445 $\mu\mu\text{F}$ Tuning	18684	F4
L3	Oscillator Coil 540-1600 Kc/s	32406*	F13	C7	220 $\mu\mu\text{F}$ Trimmer (on gang)		G4
L4, L5	1st I.F. Transformer	27351	H5	C8	100 $\mu\mu\text{F}$ silvered mica (in 1st I.F.)		H5
L6, L7	2nd I.F. Transformer	27353	H8	C9	100 $\mu\mu\text{F}$ silvered mica (in 1st I.F.)		H5
RESISTORS							
R1	100 ohms		G15	C10	0.05 μF paper 400V working		J13
R2	22,000 ohms		H16	C11	100 $\mu\mu\text{F}$ silvered mica (in 2nd I.F.)		H8
R3	10,000 ohms		H15	C12	100 $\mu\mu\text{F}$ silvered mica (in 2nd I.F.)		H8
R4	220 ohms		H12	C13	220 $\mu\mu\text{F}$ ceramic		H11
R5	1.5 megohms		G10	C14	0.05 μF paper 400V working		D14
R6	0.5 megohm Volume Control	26442	D3	C15	0.01 μF paper 600V working		J10
R7	50 ohms		F10	C16	0.25 μF paper 200V working		F10
R8	10 megohms		J8	C17	100 $\mu\mu\text{F}$ mica		G9
R9	1,000 ohms		G11	C18	0.025 μF paper 400V working		G8
R10	0.22 megohm		J9	C19	0.1 μF paper 200V working		H5
R11	47,000 ohms		G6	C20	12 $\mu\mu\text{F}$ mica		G6
R12	0.47 megohms		F6	C21	0.0025 μF paper 600V working		J4
R13	0.47 megohms		F4	C22	24 μF 350 P.V. Electrolytic		C14
R14	5,000 ohms		D12	C23	24 μF 350 P.V. Electrolytic		E4
R15	150 ohms		F2	TRANSFORMERS			
CAPACITORS							
C1	12-445 $\mu\mu\text{F}$ Tuning	18684	F3	T1	Loudspeaker Transformer	31772D	G8
C2	220 $\mu\mu\text{F}$ Trimmer (on gang)		G3	T2	Power Transformer 50 c.p.s.	25807	G15
C3	0.05 μF paper 200V working		G13	LOUDSPEAKER			
C4	440 $\mu\mu\text{F}$ Padder $\pm 2\frac{1}{2}\%$		F14	4" Permanent Magnet			
C5	9 $\mu\mu\text{F}$ mica		F4	SWITCHES			
Other Components							
				S1	Buzzer Contacts		C9
				S2, S3	Radio and Appliance Outlet Contacts		C9

* Later models use Oscillator Coil No. 35403.